

### Remarks

The claims have been amended to emphasize the nonobviousness of Applicant's invention and, in the case of Claim 14, to better conform it to Claims 1-13.

All claims stand rejected as having been obvious to one of ordinary skill in the art over Takahashi (JP401232156A) in view of Nakada (3,973,543) and Suzuki et al. (4,347,825), taken further in view of Nagaishi et al. (4,185,604) as to Claims 3-6. It is respectfully submitted that these rejections are without merit.

The Examiner has acknowledged that Takahashi does not show means for charging fuel and extending into a second duct, as expressly required by all claims. There is no suggestion in Takahashi that it would have been obvious to provide charging means extending into the fuel duct.

Applicant has found that there is a significant difference in practice between the effect of applying the charge to the fuel externally of the duct, compared with applying the charge to the fuel internally of the duct. Takahashi had every opportunity to consider the effect of the position of the electrodes, but clearly regarded the position of the charging means to be insignificant.

So too, the Examiner has acknowledged that Takahashi does not show means for preheating the fuel upstream of the charging means, as is also required by all claims. Furthermore, but without specifically so stating, the Examiner has acknow-

ledged that Nakada only teaches preheating the fuel downstream of the charging means. Despite this, Examiner has asserted that heating the fuel upstream of the charging means would have been an obvious matter of design choice; that is clearly *not* the case.

In Nakada, the fuel is first mixed with air and is then heated downstream of the charging means after the air/fuel mixture has been subjected to a single electrostatic charge. There is no teaching or suggestion in or by Nakada that the fuel and air should be charged separately, nor is there any teaching or suggestion that the fuel should be charged before being mixed with the air. Contrary to the Examiner's assertion, it would be a major modification to heat only the fuel, and to do so prior to mixing with air and prior to charging, as contrasted with the actual teaching of Nakada, which is to heat both fuel and air after both mixing and charging.

The Examiner has acknowledged furthermore that Takahashi does not show an earthed electrode within a duct, selected from a first duct and a second duct, as required by all claims. According to the Examiner, Suzuki et al. teach the use of an earthed electrode 2 in the fuel duct; this interpretation of Suzuki et al. is clearly inaccurate.

In fact, Suzuki et al. describe, in relation to Figure 1, only an experimental arrangement, which does not involve the presence of a fuel duct. According to

Suzuki et al. at column 1, line 58, to column 2, line 2, a liquid is injected through an annular electrode 4 from an earthed nozzle 1 toward an earth electrode 2. This is simply an experiment, and a duct is not required and is not provided.

When the embodiments of the invention of Suzuki et al. are described and shown, the electrode becomes the wall of the suction conduit 7 (see, for example, column 3, lines 55-65, and Figure 2). Indeed, the wall of the suction conduit 7 is the electrode for a very good reason, as explained for example in the passage from column 3, line 66, to column 4, line 4 of the reference. The reason is to prevent the fuel attaching to the inside surface of the suction conduit 7.

Consequently, not only is there no teaching or suggestion of or for the provision of an earthed electrode within a duct selected from the first duct and the second duct, but moreover such a provision is clearly contrary to the true teaching of Suzuki et al., because it would no longer prevent the fuel attaching to the inside of the suction conduit 7. In accordance with the presently claimed invention, the fuel will inevitably be in contact with the duct as it flows therethrough, and consequently issues of attachment are completely different.

Furthermore, the teaching of Suzuki et al. is that the mixture of fuel and air should be charged together, and therefore subjected to a single electrostatic charge. There is no suggestion that the fuel or the air should be charged separately, with the provision of an earthed electrode in the duct.

It follows from the foregoing that the independent claims of the present invention define an invention that is clearly novel and nonobvious over the prior art.

With particular regard to Claims 4 and 6, those claims require that the earthed electrode be disposed upstream of the charging means. Even if Figure 1 of Suzuki et al. were to teach the provision of a separate earthed electrode within a duct (a premise with which Applicant does not agree), the earthed electrode is *downstream* of the charging means. This is directly contrary to the requirement of each of Claims 4 and 6, and the positioning of the earthed electrode upstream of the charging means has the opposite effect, i.e., that of accelerating the charged fuel/air rather than decelerating the same. Consequently, it is contrary to the teaching of Suzuki et al. to position the earthed electrode upstream of the charging means, because doing so would have the effect of increasing, not decreasing, the risk of fuel attaching to the inside of the suction conduit 7.

In view of all of the foregoing, it is evident that all pending claims of the application define an invention that is novel and patentable over the prior art. Withdrawal of the rejections, and passage of the application to allowance are believed to be clearly in order; such actions are earnestly solicited.

Enclosed herewith is a Petition for Three-Month Extension of Time, together with a form-2038 authorization in the requisite amount. Please charge any deficiency to Deposit Account No. 502982.

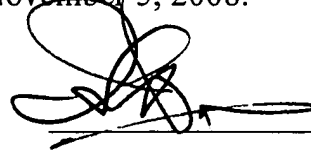
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CERTIFICATE OF MAILING

I, IRA S. DORMAN, hereby certify that this Amendment In Response to Office Action, Petition for Extension of Time and Form-2038, are being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed as set forth above, on November 5, 2008.



cc: Derek C. Jackson, Esq.  
(P0998)